WHAT IS CLAIMED IS:

1. A balloon catheter comprising:

an inner member having a proximal end, a distal end, and a guidewire lumen extending therethrough;

a distal tip at the distal end of the inner member~~catheter shaft~~;

a reinforcement sleeve disposed coaxially over the inner member, said sleeve having a proximal end and a distal end and providing an inflation lumen between an outer surface of the inner member and an inner wall of the sleeve;

an inflatable balloon having a distal end secured to the distal tip and/or distal end of the inner member and a proximal end secured to the reinforcement sleeve so that the balloon can receive an inflation medium from the inflation lumen, the inflatable balloon further having a distal leg proximal of the distal end and a distal taper proximal of the distal leg;

wherein, when the balloon is deflated, the distal end of the reinforcement sleeve is held in place by pressure and/or friction applied from the distal leg and will engage a proximal surface of ~~couple~~ the distal tip to transfer pushing forces to said tip, the proximal surface being adjacent or distal to the distal leg and,

wherein, when the balloon is inflated, the distal end of the reinforcement sleeve can separate from the proximal surface of the distal tip to enhance flexibility and limit deformation of the inflated balloon.

2. A balloon catheter as in claim 1, wherein the distal end of the distal tip is asymmetrically beveled so that the distal tip can be rotationally oriented relative to a luminal obstruction when the catheter is present in a body lumen.

3. A balloon catheter as in claim 1, wherein a distal region of the reinforcement sleeve is tapered within the balloon to reduce the crossing profile of the balloon.

4. A balloon catheter as in claim 1, wherein the reinforcement sleeve ~~catheter~~ has a substantially uniform diameter over a distal region.

5. A balloon catheter as in claim 1, wherein the inner member comprises a hypotube over at least a portion of its length.

6. A balloon catheter as in claim 1, wherein the inner member comprises a polymer tube over at least a portion of its length.

7. A balloon catheter as in claim 6, wherein polymer tube is reinforced.

8. A balloon catheter as in claim 1, wherein the reinforcement sleeve comprises a polymer tube over at least a portion of its length.

9. A balloon catheter as in claim 8, wherein the polymer tube is reinforced.

10. A balloon catheter as in claim 1, wherein the balloon has a distal construction which defines an annular channel which receives the distal end of the reinforcement sleeve.

11. A balloon catheter as in claim 1, wherein the distal tip is a separate component attached to the distal end of the inner member.

12. A balloon catheter as in claim 1, wherein the distal end of the balloon is attached to the proximal surface of the distal tip.

13. A balloon catheter as in claim 12, wherein the balloon has a collar region at its distal end which is attached to the distal tip.

14~~2~~. A method for dilatating a lesion in a blood vessel, said method comprising:

providing a catheter having an inner member, a distal tip, a reinforcement sleeve, and an inflatable balloon connected at a distal end to the inner member and at a proximal end to the reinforcement sleeve, wherein, when the balloon is deflated, a distal end of the reinforcement sleeve engages a proximal surface of the distal tip located adjacent or distal to a distal leg of the inflatable balloon, and the distal leg is distal to a distal taper of the inflatable balloon and applies pressure and/or friction to hold the distal end of the reinforcement sleeve in place;

advancing the catheter through a patient's vasculature by pushing a proximal end of the inner member to transmit force to the distal tip through both the inner member and the reinforcement sleeve, while both the inner member and distal end of the reinforcement sleeve remain engaged with the distal tip, to position the balloon at the lesion; and

inflating the balloon within the lesion such that the balloon radially expands and elongates and the distal end of the reinforcement sleeve separates from the proximal surface of the distal tip to accommodate such balloon elongation.

15~~3~~. A method as in claim 14~~2~~, further comprising rotating the catheter about its axis as it is being advanced, wherein rotational torque is transmitted to the distal tip through both the inner member and the reinforcement sleeve.

16~~4~~. A method as in claim 15~~3~~, wherein the distal tip has an asymmetric bevel ~~a beveled and~~ which is reoriented relative to an obstruction in the vasculature as the catheter is rotated.